THE JOURNAL OF SCHOOL HEALTH

Vol. XXV No. 10

DECEMBER
1955

Jerrold S. Crowell, D. D.
414 14th St.
Denver 2, Colo.

PUBLISHED BY
THE AMERICAN SCHOOL HEALTH ASSOCIATION

AMERICAN SCHOOL HEALTH ASSOCIATION

Organized 1927

Devoted to the interests and advancement of those engaged in school health activities and the service rendered by them

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THE JOURNAL OF SCHOOL HEALTH

THE AMERICAN SCHOOL HEALTH ASSOCIATION

Chicago, Ill.

Published monthly, except July and August, at Buffalo, N. Y.

Editor-in-Chief

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Membership dues, $3.00 including Journal: Subscription $3.00

Single copies 35c, send payment with order

Address communications concerning publications

To THE EDITOR, The Journal of School Health

Room 617, 228 No. LaSalle St., Chicago, Ill.

Copyright, December, 1955 by
The American School Health Association

Entered as second-class matter at the Post Office at Buffalo, N. Y.
October 5, 1937

The Journal of School Health
is printed by
RAUCH & STOECKL PRINTING CO., INC.
120-130 ELMWOOD AVE., BUFFALO, N. Y. (near Allen)

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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XXV DECEMBER, 1955 No. 10

REPORT OF THE PRESIDENT

H. FREDERICK KILANDER, Ph.D.

The American School Health Association has now completed its twenty-ninth year of professional activity and leadership in the field of school health. Just as the school programs of our schools have grown during the past several years, so also has the program of the American School Health Association.

There has been a steady advance in the number of school systems which report school health programs over the nation. And what is even more important, the scope of these programs has expanded considerably in many areas. Such expansion indicates a greater recognition — on the part of school boards, school administrators, and parents — of the importance of the school's part in furthering the health of school children.

Have you noticed the marked increase in health coverage in the newspapers, in professional and nonprofessional journals, and on radio and TV? Have you noticed that the schools have had a share of this coverage? The public is recognizing more and more the importance of health and the role of the school in its furtherance. Our Association has no doubt played an appreciable part in this change.

There are at least three specific ways in which you can benefit from your membership in the American School Health Association. All members receive the Journal of School Health, so ably edited by Dr. Marie A. Hinrichs and her staff of associate editors. Remember that this is the only journal, national in scope, devoted exclusively to the school health field. Its articles are varied, concise, and timely. For the busy person, it is really a school health digest. I personally believe that it belongs on the desk of every professional school health person. Educators and others related to the schools of our country can also benefit from reading it. Is it available to your colleagues in the library of your own school? We invite more of our members and others to contribute articles to the Journal about their ideas and programs.

A second way that you can benefit is by your physical presence at these annual conventions. We have a fine program planned

Presented at the Annual Meeting of the American School Health Association, November 14, 1955 at Kansas City, Mo.

for you, ably arranged by your program chairman, Dr. Fred V. Hein. We are also sponsoring some joint sessions with the School Health Section of APHA and other groups.

I am sure that you, as I, attend these meetings to become inspired and enthused, to renew acquaintances in our respective fields, and to bring back some additional know-how that can be applied to our own school situations. Unfortunately, all of our members do not have the opportunity to attend these meetings—due to cost and lack of time. Fortunate are those who have enlightened school boards who realize the returns they get by enabling you to attend professional meetings. We try to make some provision for those who are not here by publishing pertinent speeches in the Journal.

There is a third way in which we as Association members can contribute of our time and interest and professional experience, and that is through Association Committee work. And since most of such work is done by correspondence, membership on committees need not be limited primarily to members who can attend annual meetings.

We have the usual "housekeeping" committees — our standing committees — that are necessary to keep the Association machinery operating. There are fifteen of these which deal with matters such as finance, constitution, legislation, necrology, programming, fellowships and awards. Another one which deals more directly with you is the Committee on Membership — one of our most important committees. Here is a place where we need state and local help. Write to Dr. J. Keogh Rash to let him know that you are willing to be of such assistance.

Study Committees. We also have our Study Committees — currently twelve in number. They range in interest area from the school lunch program and mental health in the school, to health problems in physical education and athletics and the professional preparation of teachers.

Committees are making progress with their reports which appear in the Journal from time to time. We are pleased to announce that "Recommended Policies and Practices for School Nursing" is ready after considerable work on the part of our Commmittee on School Nursing Policies and Practices. It is expected to appear in the January issue of the Journal.

Three of our newest committees are in need of additional assistance from our members. Dr. Leland Corliss, Chairman of the Committee on School Health Service Facilities, would appreciate

receiving plans for such facilities. Our committee on Dental Health Programs in Schools needs to be expanded both in personnel and in program and so, if your are interested, please contact its chairman, Dr. Ross E. Gutman. Dr. Carl Anderson, Chairman of the Committee on Health Guidance in the Schools, will appreciate information about such programs in your local schools. You can make a direct contribution to your association and to the health of school children through membership on these and other study committees, and by supplying information about ongoing practices in your schools of interest to the respective committees.

Relationship to other organizations. The growing number of instances of the Association working with other organizations and conferences indicates two things. I believe that there is an increasing number of groups and programs related to or interested in school health, and that there is a greater attempt to work cooperatively on these matters. A review of these activities is almost a review of what has happened nationally in school health throughout the year.

We continue to be representeed on the National Advisory Committee for the Improvement of Professional Preparation in Health Education, Physical Education and Recreation; on the National Conference for Cooperation in Health Education; on the Joint Council on International Affairs in Health, Physical Education and Recreation, and on many others.

This past year, we were represented at the following conferences: The National Conference on the Undergraduate Health Education Minor and the Desirable Health Education Emphasis for the Physical Education Major; The Fifth Annual Conference of Physicians and Schools; and the School Nursing Conference.

We will shortly be represented at two forthcoming conferences — the White House Conference on Education at the end of this month, and the National Conference on College Health Education in January.

Also, as an association, we became a member this past year of the International Union for Health Education of the Public, of which one of your own past presidents — Dr. Claire E. Turner — is the current president.

Membership and Finances. Our association is growing, slowly but steadily. Membership is, of course, the backbone of any organization. We need your help through maintaining your own membership. Let us each try to get *at least one new member* this coming year — in fact this coming month while the idea is fresh in mind.

Our growing membership is enabling the association to be of greater service. For example, the Journal has been increased in size slightly without any additional cost to you.

We wish to thank the Metropolitan Life Insurance Company for underwriting the cost of a special supplement of the Journal containing Dr. Farnsworth's talk of last year on mental health, and the Public Health Committee of the Paper Cup and Container Institute for similarly assisting our Committee on the School Lunch Program.

Our Secretary-Treasurer, Dr. A. O. DeWeese, continues to work diligently and effectively for the Association. We wish to express publicly our thanks to him, as well as to Kent State University, for making available so much of his time and its facilities to our association.

In conclusion, I wish to thank the many other members of the Association and the Council for their fine cooperation during the past two years of my presidency. I know that the Association will have a successful year ahead under the leadership of Dr. I. P. Barrett of Fort Worth, Texas.

* * * * *

REVIEW

Recreation for the Handicapped. *Valerie V. Hunt,* Prentice Hall, Inc., New York, pp. 340, price $6.65.

This text is an effort to gather types of recreation about certain deviations from normal. It contains general statements concerning handicap characteristics.

Numerous references to texts and journals appear. Unfortunately, instead of being placed at "foot of page," they occur as separate listings, arranged by chapters, at the end of the book — an extremely inconvenient arrangement, which woefully shatters the reader's flow of thought.—*Chas. H. Keene.*

* * * * *

NEWS AND NOTES

Free, up-to-date high school teaching unit on polio and the vaccine. Composed of: No. 11, "Poliomyelitis — A Source Book for High School Students" (order one booklet for each student), No. 12, "Poliomyelitis — A High School Teacher's Guide," containing suggested classroom activities, and the 35 mm., color filmstrip "Polio and the Vaccine." The filmstrip, which has 44 frames, is free on loan or may be purchased for $2. Order from The National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York.

MEASURING THE GROWTH CHARACTERISTICS OF SCHOOL CHILDREN

HOWARD V. MEREDITH, Ph.D.

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The growth characteristics of children are studied for many reasons and by many people. They are studied (1) to determine how different body organs and tissues grow, (2) to discover under what conditions growth is retarded or accelerated, (3) to compare the growth of children with the growth of other mammals, (4) to obtain patterns for the manufacture of fitted clothing, and so forth. They are studied for some purposes by the morphologist and comparative anatomist, for other purposes by the biochemist and child psychologist, and for still other purposes by the makers of footwear and school seating.

Why are school health workers interested in measuring the growth characteristics of children? It is my view that this group measures growth in order to do one of three things — describe, appraise, or screen. Let us examine the meaning of each of these terms.

Describing Growth. Describing growth has sometimes been confused with appraising or evaluating growth. Description is one thing, evaluation is another. What is description? This can be answered concretely by discussing the compound question: How are norms for description constructed, and how are they properly used?

Assume we wish to construct a norm for describing the height of boys, 9 years of age attending the Greater Kansas City elementary schools. What are the steps? First, records of height at this age must be secured on a large number of boys. To complete this step, let us assume that height records are available from the schools on every boy who reached age 9 during the past year. Next, the records must be arranged in order. This is equivalent to saying that the boys must be placed in a series, beginning with the shortest one measured and continuing progressively to the tallest. Finally, the ordered records, must be partitioned, to obtain working subdivisions. A convenient way of taking this last step is to make five categories by partitioning the height series at the 10th, 30th, 70th and 90th percentiles. We now have a norm, or frame of reference, characterizing those boys below the 10th

Presented November 16, 1955, at a meeting of the section on School Health Services of the American School Health Association.

percentile as "short," those between the 10th and 30th percentiles as "moderately short," those between the 30th and 70th percentiles as "average in height," those between the 70th and 90th percentiles as "moderately tall," and those above the 90th percentile as "tall."

How is this norm properly used? Clearly, *its proper use is for descrsiption.* It describes the height status of contemporary school boys aged 9 years living in a particular geographic area. It enables one to determine, under its specifications, whether an individual is tall, moderately tall, about average, moderately short, or short.

A norm constructed in this way *ought never to be used for evaluation.* It provides no basis for interpreting the word short as "retarded in height," or the word tall as "undesirably tall." What it *does* is describe variations in height; what it *does not do* is appraise these variations as satisfactory or unsatisfactory. Unfortunately, those who construct norms are not always explicit regarding their legitimate utilization. It follows, then, that school health workers must inquire sufficiently into the construction of a norm to find out what purposes it fittingly can serve.

Appraising Growth. In evaluation or appraisal, the objective is that of determining whether the organism is satisfactory or unsatisfactory, fit or unfit, healthy or below par. Wherever possible those deviations regarded as undesirable are identified as to direction by terms such as stunted or overgrown, retarded or accelerated, underweight or overweight.

Evaluation implies values; it is rooted in traits or qualities on which high value is placed. Desiderata in the area of human health pertain to vigor, stamina, productivity, and so forth. For our culture they include values such as low susceptibility to fatigue, high resistance to disease, and low incidence to emotional irritability.

Before norms for appraisal can be constructed, investigations must be made of the relationship between what is valued and what is projected for normative use. For example, in order to use height in constructing a norm for appraisal it would be necessary to have information on such matters as the consistency with which (1) small gain in height is associated with the onset of disease, (2) large gain in height is associated with low resistance to fatigue, and (3) average gain in height is associated with deficient diet and/or frequent illness. Again, in order to construct evalution norms utilizing the relation of height to weight it would be neces-

sary to know the degree of association between this variable and numerous components of nutrition, endocrine functions and physical activity.

Few controlled investigations of this type have been made. What is available has been obtained largely by nutritionists and pediatricians on young infants, or by biometricians and geriatricians on adults. For the elementary and high school years the requisite information is conspicuously meager.

Obviously it is a much larger task to develop norms for appraisal than to construct norms for description. At the childhood ages this larger task looms essentially as a task for the future. As of this time, valid norms for school use are plentiful if one's objective is *descriptive* and practically nonexistent if one's objective is *appraisal.*

Growth Screening. Lacking well-validated norms for appraisal, can school health workers do anything more than describe growth characteristics? This question is answerable in the affirmative by the availability of norms for screening. These norms go beyond description, yet they do not appraise. Their function is to *aid* in appraisal, to select those children in a school who deviate sufficiently to warrant special study. As one writer has stated,[4] in the construction of norms for screening there is clear recognition of the "reciprocal roles" of growth screening and the medical examination. Screening furnishes objective leads on "possible deviations in health," thereby bringing certain children to the attention of school health personnel. The medical examiner, in turn, proceeds with the intensive effort of determining whether each child thus screened appears best appraised as "satisfactorily healthy" or "needing prescribed therapy."

Norms for screening are available on two planes: (1) For schools in which it is not considered practicable to measure more than height and weight,[3] and (2) for schools able to carry a program based on seven body measures.[7] The broader program provides valuable information regarding "stockiness of the bony skeleton, bulkiness of the musculature, and quantity of subcutaneous tissue." The more restricted program, although necessarily less explicit with reference to muscle and fat, gives a sufficient amount of the useful information to claim support as a recommended minimum.

What is the foundation of these norms? In essence, they represent the joint utilization of two or more norms for description

in ways suggested by clinical experience. This succinct characterization is clear to the extent that "norms for description" have been explained, and "clinical experience" needs no amplification. It remains, then, to expand on the words "joint utilization" and "ways suggested by."

There exists a large fund of clinical observation indicating that "the nature of the diet, the habits of physical activity, and the character and duration of certain illnesses *may influence the progress of growth.*"[7] This has a twofold implication: (1) It points to the value of screening in terms of growth characteristics, and (2) it cautions against the view that small size or slow growth or slender build *necessarily* is a manifestation of poor health.[1,8] In short, here is the basic suggestion that body measurements can serve a health function as fruitful "adjuncts to the medical examinations of school children."[7]

Screening by joint utilization of norms for description is explained most readily through examples. The examples will illustrate (1) screening in terms of growth status, and (2) screening in terms of growth progress.

The construction of a norm for describing height status at age 9 years was discussed at an earlier point. Following the same procedure another norm could be obtained for describing weight status. From joint use of these norms it would be found that some school boys in the Greater Kansas City area are "short" and "light," some are "tall" and "heavy," some are "moderately tall" and "average in weight," and so forth. The boys showing marked discrepancy betweens height status and weight status would be screened. For instance, a boy of average height and light weight would be referred for examination; it is part of effective school health service to obtain a substantially-based judgment on whether he is a healthy boy of slender build, or "underweight" as a consequence of unrecognized infection, nutritional deficiency, or unsuitable activity program. Again, a heavy boy of average height would be screened, the objective in this case being to discover through careful appraisal whether he is a healthy individual of stocky build, or an overweight needing a prescribed diet, a change in daily regimen, or endocrine therapy.

Screening with reference to growth progress necessitates norms extending over a period of time. Assume, therefore, that the same procedure described in obtaining height and weight norms at age 9 years is followed at ages 6 years, 7 years, 8 years,

and beyond 9 years. It now becomes possible (1) to make charts for height and weight covering the entire school period, and (2) to plan a program of screening that includes the use of information on each child's growth progress from age to age. For example, the changes in weight between successive weighings can be examined, and instances of failure to gain, to lose, or of unusually large gain subjected to follow-up.

Measuring Growth. Whatever the purpose for which characteristics are measured, it is important to place due emphasis on carefulness in measuring. Body measurements will not depict growth soundly and usefully unless they are obtained with care.

Weighing scales should be checked for dependability once or twice a year, and adjusted for proper balance on each occasion of use. Children should be weighed wearing as little clothing as practicable, thus minimizing the influence of seasonal (and daily) variation in the weight of school clothing. At the time body weight is determined, it should be observed that the child's feet are near the center of the platform, and his hands free from contact with the head portion of the scales or any other object.

The most reliable way to measure height is with the child standing against an upright board, or a wall without wainscoting.[9] After a metric scale has been affixed to the board or wall, this should be tested to assure that its relation with the floor is correct. The child, having removed his shoes, should stand with heels, buttocks and upper part of back contacting the wall or board; with feet almost together but not braced against each other; with arms hanging at the sides in a natural manner; with head erect and facing straight forward. At the time height is determined it should be observed that the heels are in contact with the floor, the body is held erect, the headpiece is kept horizontal, and no obstruction (e.g., comb, clasp, or braid) prevents the headpiece from making contact with the top of the head.

It follows that if more measurements than height and weight are taken, they should be obtained with comparable attention to accuracy of instruments, precision of methods, and painstaking effort to secure dependable records.

With respect to frequency of measurement, a schedule calling for records every four months is recommended. Specifically this means measuring each child in September, January and May. While recognizing that a bimonthly schedule would have somewhat richer possibilities, it appears preferable to foster more limited effectiveness and let expansion in scope come later.

Selecting Norms. At the level of school services, health workers usually select rather than construct their normative tables and charts. The selection of professional materials presupposes competence. In the area under discussion it presupposes not only knowing the purpose for which a norm is needed, but also having some acquaintance with what investigators of child growth have discovered.

Suppose one wishes to select a norm for describing height at age 9 years. Can a single norm be selected for use with United States white and Negro boys? It can, if the two ethnic groups are known not to differ in height at this age. Can frames of reference derived on white boys and girls residing in Los Angeles be selected for use with white children living in Greater Kansas City? They can, if it has been found that children in those geographic locations are alike in height. At the school age, neither of these differences exceeds half an inch.

Turning to a matter of greater consequence, it would be grossly inappropriate today to use norms specifically based on children of one's own school district but constructed around 1900 or 1925. Compared with half a century ago today's school children are taller by 3 inches at the early elementary school ages, taller by 4 inches around 12 years of age, and taller by about 2 inches at the end of the high school years.[2,5,6] This more rapid development in body size has been accompanied by earlier occurence of the menarche. The average age of first menstruation was more than a year later around the turn of the century than it is today.

The implication of these findings for norm selection is illustrated with force by the following examples. Assume that (1) the height of a present-day school girl aged 10 years is referred to a norm constructed on her peers of 1910, and (2) she is found to be *"moderately tall."* On transferring her height to a contemporary norm, it would be found she is *"moderately short."* Equally faulty descriptions of height status would be obtained for girls 11 and 12 years of age, or for boys 12 to 14 years of age. Today approximately 1 girl in 8 menstruates before 12 years of age, around the turn of the century about 1 girl in 20 had menstruated by this age. Formerly the menarche was not reached until after 17 years of age by 1 girl in 10; postponement to this age is now a rare phenomenon.

At this point it is possible to state two guiding principles in norm selection. First, school health workers should choose norms that will describe and screen rather than appraise. At the present

time the purposes of health education and health service are served most effectively by norms that supply descriptive information on the growth status and progress of each child and lead to screening in terms of growth status and progress. Secondly, school health workers should choose norms that will portray in correct perspective the growth characteristics of the pupils with whom they deal. It is particularly important to examine norms for contemporary adequacy.

As mentioned earlier, norms meeting these criteria are available for a minimum school program and for a more comprehensive school program. Each affords a frame of reference for every individual pupil, together with explicit instructions regarding its use and interpretation. Each performs the following functions: (1) provides the child with a personal physical growth record that accompanies him from grade to grade, (2) furnishes the health education teacher with resource material depicting individual variation in growth, and (3) brings to the attention of school health personnel those deviations in growth status and progress that are sufficiently suspect to prompt screening and exploration.

REFERENCES

1. Martens, E. J., and Meredith, H. V. Illness history and physical growth. American Journal of Diseases of Children, 64: 618 (Oct.), 1942.
2. Meredith, H. V. The stature and weight of United States Children. American Journal of Diseases of Children, 62: 909 (Nov.), 1941.
3. Meredith, H. V. A physical growth record for use in elementary and high schools. American Journal of Public Health, 39: 878 (July), 1949.
4. Meredith, H. V. Height-Weight interpretation chart for elementary school boys. Eugene: University of Oregon Press, 1951.
5. Meredith, H. V., and Meredith, E. M. The stature of Toronto children half a century ago and today. Human Biology, 16: 126 (May), 1944.
6. Meredith, H. V., and Meredith, E. M. The body size and form of present-day white elementary school children residing in west-central Oregon. Child Development, 24: 83 (June), 1953.
7. Stuart, H. C., and Meredith, H. V. Use of body measurements in the school health program. American Journal of Public Health, 36: 1365 (Dec.), 1946.
8. Washburn, A. H. Growth: Its significance in medicine viewed as human biology. Pediatrics, 5: 765 (May), 1950.
9. Whitacre, J. Standing heights of school children as determined by two techniques. American Journal of Physical Anthropology, 18: 457 (Jan.), 1934.

ARE HIGH SCHOOL HEALTH TEXTS TOO DIFFICULT?

H. S. HOYMAN, ED.D.
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Health textbooks are widely used in high schols in the United States. It is self-evident that a student cannot use a health text effectively unless he can read and apply what is in it.

The scientific study of readability is not a matter of the past few years as some have assumed.[1] However, readability formulas such as the Dale-Chall Formula,[2] the Flesch Index,[3] and the Fog Index[4] are fairly recent developments. These new readability yardsticks stem from the earlier work of Sherman,[5] Kitson,[6] Thorndike,[7] Gray and Leary[8] and others. They have been widely used in recent years for testing the readability of newspapers, business letters and documents, and other types of written materials, including textbooks.

The marked differences in reading ability of students in the same grade of school complicates the problem of readability. For example, the students in a typical seventh-grade health class will often range over five grades or more in their reading ability.[9] Some of the poorest readers in the seventh grade can comprehend little more than the prose found in comic magazines. Some of the better seventh-grade students can read some of the articles or news items in magazines such as Reader's Digest or Time, or even in the Atlantic Monthly, with reasonable comprehension.[10] If these marked individual differences in reading ability are to be taken more fully into account in health teaching, then, more accurate knowledge of the reading difficulty levels of health textbooks is needed.

Reading-Difficulty Levels of Health Texts. Several years ago, Taylor[11] and Hanson,[12] graduate students in health education at the

1. G. R. Klare and B. Buck, **Know Your Reader**, New York.: Hermitage House, 1954.
2. Edgar Dale and Jeanne S. Chall, "A Formula for Predicting Readability," Educational Research Bulletin (Ohio State University), 1948, Vol. 27, pp. 11-20.
   ———, "A Formula for Predicting Readability: Instructions," Educational Research Bulletin (Ohio State University), 1948, Vol. 27, pp. 37-54.
3. Rudolph Flesch, **How to Test Readability**, New York: 1951.
4. R. Gunning, **The Technique of Clear Writing**, New York: McGraw-Hill Book Company, 1952. Chap. 3.
5. L. A. Sherman, **Analytics of Literature**, Boston: Ginn and Co., 1893.
6. Harry D. Kitson, **The Mind of the Buyer**, New York: The Macmillan Company, 1921.
7. Edward L. Thorndike, **The Teacher's Word Book**, New York: Bureau of Publications, Teacher's College, Columbia University, 1921.
8. William S. Gray and Bernice Leary, **What Makes a Book Readable**, Chicago: University of Chicago Press, 1935.
9. Klare and Buck, op. cit., p. 21.
10. Ibid.
11. Raymond M. Taylor: **The Readability of High School Health Texts: Flesch Index**, Champaign, Illinois, Unpublished Master's Thesis, University of Illinois, 1953. 79 pp. (The Master's theses by Taylor, Hanson, and Zaharko may be secured from the University by writing to Inter-Library Loans, Circulation Department, University of Illinois, Urbana, Illinois.
12. Nathan C. Hanson: **The Readability of High School Health Texts: Fog Index**, Champaign, Illinois, Unpublished Master's Thesis, University of Illinois, 1953. 89 pp.

University of Illinois, conducted pilot studies to determine the reading difficulty grade levels of fourteen high school health texts. They found that seven of the fourteen texts had reading difficulty levels of tenth grade or higher and four tested at eleventh grade or higher. Their findings indicated that some senior high school health texts might be too difficult, especially when used in the ninth or tenth grade.

Zaharko,[1] using the Fog Index,[2] has completed a more recent study at the University of Illinois on twenty high school health texts published during the past ten years.

Briefly stated the Fog Index is based upon two factors: (1) Average sentence length and (2) the percentage of difficult words. Three steps are used to calculate the Fog Index for a given health text: (1) the average sentence length is computed for all random samples tested; (2) this factor is added to the percentage of difficult words for all random samples tested; and (3) this two-factor total is multiplied by .4 (the constant .4 was determined by the use of a regression equation). The Fog Index is then interpreted by using Gunning's Table of school-grade levels of reading difficulty.[3]

Table I shows that the twenty senior high school health texts ranged from grade 9 to grade 14 in reading difficulty. However, all but one of the texts tested at a tenth grade level of reading difficulty or higher.

Zaharko's findings,[4] in general, confirm those of Hanson and Taylor, and again indicate that many current high school health texts may be too difficult. This would be true especially when the more difficult texts are used in the ninth grade; or when they are used by below average readers in any of the grades 9 to 12 where health is taught.

The question arises: Are the differences between the twenty texts, listed in Table I, real differences, or could they be due to chance fluctuations in random sampling?[5] Edward's formula[6] for analysis of variance was used to test the overall significance of the differences between the twenty texts. The F ratio was found to be 4.19. At the five per cent level of confidence, the tabled value for an

1. Daniel S. Zaharko: **The Reading Difficulty of Modern High-School Health Texts,** Champaign, Illinois, Unpublished Master's Thesis, University of Illinois, 1955, 124 pp.
2. Gunning, op. cit., pp. 34-39.
3. Ibid., pp. 35 and 38.
4. Zaharko used a slightly different scale than Hanson in translating the overall Fog Index for a given text into a school-grade level of reading difficulty. For example, a text with a Fog Index of from 9.50 to 10.49 was rated as tenth grade by Zaharko. In the study by Hanson a text with a Fog Index from 9.00 to 9.99 was rated as having a ninth grade level of reading difficulty.
5. Zaharko, op. cit., pp. 35-38, 106-109.
6. Allen L. Edwards, **Statistical Methods for the Behavioral Sciences,** New York: Rinehart and Company, Inc., 1954, pp. 320-321.

Table I Reading Difficulty Levels of Twenty High School Health Texts in Rank Order:*

Texts	** Fog Index	School Grade Level
F	13.92	14th
Q	12.72	13th
A	12.32	12th
I	12.21	12th
M	12.03	12th
L	12.01	12th
P	11.70	12th
H	11.65	12th
E	11.54	12th
N	11.40	11th
C	10.92	11th
O	10.82	11th
G	10.75	11th
R	10.73	11th
D	10.69	11th
B	10.69	11th
J	10.58	11th
S	9.59	10th
T	9.55	10th
K	9.11	9th

*Adapted from Zaharko, Daniel S.: **The Reading Difficulty of Modern High School Health Texts.** Unpublished Master's Thesis, University of Illinois, 1955. Table XXIII, p. 113.
**The overall Fog Index is based upon 15 one-hundred word random samples from each health text.

F ratio with 19 and 280 degrees of freedom is 1.63.[1] Thus the obtained ratio of 4.19 shows that there is an overall significant difference between the Fog Indexes for the twenty texts at the five percent level of confidence. So the null hypothesis — that the 300 passages are random samples from the *same* population — was rejected. In other words, these twenty health texts do actually differ in readability.

However, a significant F ratio does not mean that the Fog Index for each health text differed significantly from that of each of the other texts. A method developed by Lindquist was used to determine how great the difference between the Fog Indexes of any two health texts had to be before it was statistically significant.[2] This critical difference was found to be 1.63. For example, as may be noted in Table I, Text K with a Fog Index of 9.11 differed significantly from any text with a Fog Index of 10.74 or higher ($9.11 + 1.63 = 10.74$). This indicates that Texts F, Q, A, I, M, L, P, H, E, N, C, O, G and R, would probably be too difficult for effective use in Grade 9 (except when used by superior students). Conversely, any text with a Fog Index of 10.00 or below would probably be too easy for effective use in the twelfth grade (except when used by poor readers).

Reading-Difficulty Variations in Health Texts. Even though each health text was given an overall grade level rating, many

1. Edwards, op. cit., p. 507.
2. E. L. Lindquist, **Design and Analysis of Experiments in Psychology and Education,** boston: Houghton Mifflin Company, 1953, pp. 92-94.

grade levels of reading difficulty were found in each text. As may be noted in Table II, the number of grade levels of reading difficulty ranged from 6 in Text H (grades 9 to 14) to 13 in Text G (grades 4 to 16).

Table II The Range of Variation in Grade Levels of Reading Difficulty for Twenty Texts in Rank Order*

Texts	Random Samples	Range of Fog Indexes	Number of Grade Levels Represented
G	15	4.36 to 16.04	13
F	15	9.25 to 19.18	11
N	15	6.00 to 14.79	10
Q	15	8.78 to 17.21	9
A	15	10.06 to 17.56	9
L	15	9.25 to 17.30	9
P	15	8.48 to 16.40	9
R	15	6.60 to 14.62	9
D	15	7.75 to 15.60	9
B	15	7.19 to 15.18	9
S	15	7.51 to 16.46	9
K	15	5.55 to 13.85	9
M	15	8.52 to 16.01	8
E	15	7.96 to 14.75	8
C	15	8.48 to 14.86	8
O	15	8.15 to 14.62	8
J	15	8.48 to 14.56	8
T	15	5.88 to 13.04	8
I	15	9.40 to 15.10	7
H	15	9.43 to 13.88	6

*Adapted from Zaharko, Daniel S.: **The Reading Difficulty of Modern High School Health Texts.** Unpublished Master's Thesis, University of Illinois, 1955. Table XXIII, p. 113.

Table III shows that 58 per cent of the 300 sample passages taken from the twenty texts fell in the senior high school grades 9 to 12 inclusive. It is worth noting that only 11 per cent of the passages tested below the ninth grade level of reading difficulty, whereas 31 per cent, or about 1 out of 3 passages, fell below the twelfth grade and hence in the college level of reading difficulty.

Table III The Distribution of 300 Sample Fog Indexes from Twenty High School Health Texts*

School Grade Level	Number of Fog Indexes Found Per Grade Level	Per Cent of Fog Indexes Per Grade Level
17 College graduate	9	3.0
16 College senior	13	4.3
15 College junior	20	6.7
14 College sophomore	19	6.3
13 College freshman	32	10.7
12 High School senior	51	17.0
11 High School junior	54	18.0
10 High School sophomore	38	12.7
9 High School freshman	31	10.4
8 Grade	22	7.3
7 Grade	7	2.3
6 Grade	4	1.3
	300 Total	100.0

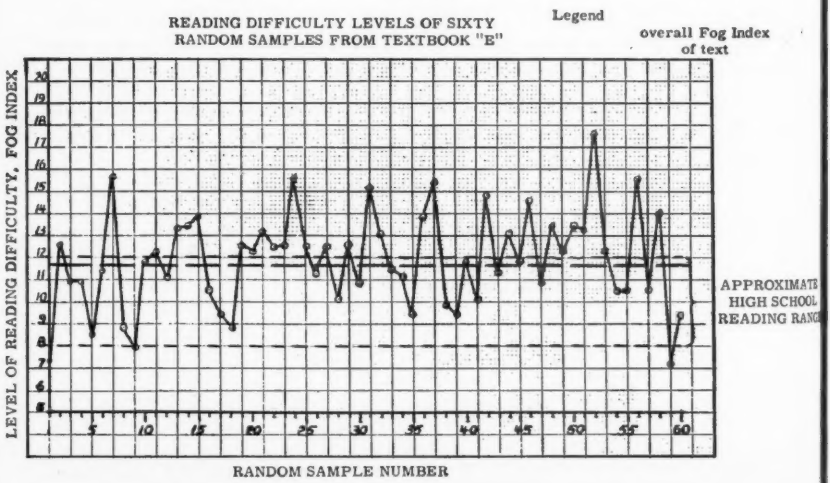
*Adapted from Zaharko, Daniel S.: **The Reading Difficulty of Modern High School Texts.** Unpublished Master's Thesis, University of Illinois, 1955. Table XXIV, p. 114.

In all the texts tested there were grade levels of reading difficulty higher than the overall school grade level assigned to the text. Table III shows that almost 80 per cent of the 300 passages had reading difficulty levels of grade 10 or higher. Moreover in all the texts, without exception, there were passages at college levels of reading difficult.

Progression in Reading Difficulty. One might expect some sort of progression in reading difficulty if the health texts allowed for growth in student reading ability throughout the school year. However, apparently none of the twenty texts were based upon a reading progression from easier material at the beginning to more difficult material toward the end of the text.

This point is graphically illustrated by Chart I showing the *lack* of a reading progression from easier to more difficult material in Text E (Fog Index 11.54 or Grade 12). Chart I also illustrates the variability in grade levels of reading difficulty found in Text E. As may be noted in Table II: Five of the texts had the same grade range in reading difficulty levels (8 grades) and twelve of the texts showed an even greater range in grade levels of reading difficulty than Text E.

CHART I


READING DIFFICULTY LEVELS OF SIXTY RANDOM SAMPLES FROM TEXTBOOK "E"
Legend
overall Fog Index of text
LEVEL OF READING DIFFICULTY, FOG INDEX
APPROXIMATE HIGH SCHOOL READING RANGE
RANDOM SAMPLE NUMBER

The following passages illustrate material at various grade levels of reading difficulty:

Passage 1: Reading Difficulty Level, Grade 8

(Average sentence length of 13.57 words, plus 6.32 per cent of hard words = 19.89 × .4 = a Fog Index of 7.96 or Grade 8)

When the cell has stored its fuel, it rests. If it belongs to a healthy, active individual, it does not relax completely, but maintains a slight degree of contraction called tone. A muscle in tone does not have to waste time taking up the slack, but is ready for instant action.

Flash! comes a command from the brain via the nerves, and immediately all is action. Instantly the unstable sugar is split into lactic acid and water, and the cell becomes thicker and shorter. It does not really grow larger but only changes its shape.

Passage 2: Reading Difficulty Level, Grade 10

(Average sentence length of 14.00 words, plus 11.11 per cent of hard words = 25.11 × .4 = a Fog Index of 10.04 or Grade 10)

It is important, therefore, that fruit not be sprayed with DDT within a month of its consumption. Care must also be taken not to spray DDT in any room where food lies exposed. There is also danger that DDT in powder form may be used by mistake for flour or sugar; it should be kept away from the pantry and out of the reach of children.

Symptoms of DDT poisoning include tingling, spasm and convulsions, with death from exhaustion if the victim does not receive proper treatment. A doctor's skill is essential in DDT cases. The poisoning may be controlled in two ways: First, by checking the convulsions through the use of sedatives, thus avoiding the exhaustion which produces death; second, by the administration of calcium.

Passage 3: Reading Difficulty Level, Grade 12

(Average sentence length of 15.14 words, plus 15.09 per cent of hard words = 30.23 × .4 = a Fog Index of 12.09 or Grade 12)

This method[1] will help in studying the functions of the digestive and nervous system. It will aid in determining causes of such diseases as arthritis, cancer, and hardening of the arteries.

Considerable success has been attained in treatment of dis-

1. The use of radioactive substances in research.

ease through certain radioactive isotopes. For example, the cobalt isotope is partly replacing radium in treatment of certain types of cancer, since it is better and cheaper. Similar isotopes are useful in treating tumors and some forms of heart disease. Iodine isotopes are used in the treatment of thyroid diseases. More and more uses for radioactive substances in medical research are being discovered from day to day.

Passage 4: Reading Difficulty Level, Grade 15 or College Junior Level

(Average sentence length of 20.14 words, plus 18.44 per cent of hard words = 38.58 × .04 = a Fog Index of 15.43 or College Junior Level, Grade 15)

Theoretically, microscopic inspection of samples of pork might be made a part of the routine inspection in the slaughterhouse with the aim of finding and eliminating infested carcasses. However, the expense would be excessive, and the time involved would tend to slow down production. More important, trichinae in meat may escape detection even under the miscroscope. The unencysted larvae and those that are encysted but uncalcified, are both virtually transparent and consequently difficult to recognize. The average age of hogs reaching the market is about 11 months, and calcification of the cysts is hardly ever present at that age. Again, specimens of meat selected at random might be free of trichinae, while other unsampled portions of meat from the same animal might be infected. Some meat has been sampled and studied twenty times before a sample bearing trichinae has been found.

Material such as Passage 3 would be difficult for ninth and tenth grade students, especially those who were average or below average in reading ability. Material such as Passage 4 would be difficult even for good high school students, and it would be too difficult for average and below average readers in grades 9 to 12.

Health Education Implications. A word of caution is needed in interpreting and using readability research findings. We should keep several points clearly in mind. First, whether a health text is readable or not is an exceedingly complex matter. Readability depends upon (1) the format, content, organization and style of the text and (2) upon many factors related to the reader. Second, readability yardsticks do *not* test all of these factors. They only

rate a few specific aspects of readability, with limited precision.[1] Yet, after all such allowances are made, certain implications pertaining to the preparation, selection and use of high school health texts remain.

Recent authors and publishers of high school health texts have had a thorny problem. We have demanded texts that are attractive inside and out. We have urged that health texts be organized around real-life needs and problems, instead of the body systems. We have stated that more emphasis should be given to: (1) accident prevention, (2) first aid and safety, (3) physical and motor fitness, (4) human growth and development, (5) noncommunicable diseases, (6) consumer-health education, (7) mental health, and (8) sex education. And now we are saying that high school health texts should be made more readable in terms of the types of students and the grade levels for which they are intended.[2]

There has been marked improvement in high school health texts during the past one hundred years. Publishers and authors should be commended for their splendid efforts in constantly improving our health texts. Yet much remains to be done. For one thing, new and revised high school health texts should be *pretested* more carefully for: (1) reading difficulty, (2) reading progression and (3) reader interest. Also authors might well keep in mind the advice attributed to Mark Twain: the difference between the right and the wrong word is the difference between lightning and the lightning bug.[3]

The use of readability yardsticks — such as the Flesch and Fog Indexes — will not provide objective answers to all of our questions about the readability of high school health texts. However, they are simple to apply and accurate enough that they should be used by schools and textbook commissions and committees as one source of objective information in textbook selection.

In selecting and using high school health texts: we should keep superior as well as average and below average students in mind. We should not bore good students with health texts that are too easy to be challenging. Nor should we give the average poor students assignments in textbooks so difficult they cannot read them. High school students can read faster, remember longer,

1. Klare and Buck, op. cit., Chaps. 9 and 14.
2. H. S. Hoyman, "High School Health Textbooks—How Readable?", **The Physical Educator, Vol. XII. No. 3 (October, 1955), p. 89.**
3. Ibid., p. 91.

understand and apply better, and enjoy the health text more when it is readable than when it is not.

Perhaps, inadvertently, we have placed too many high school students in the same predicament as Alice as she was falling down the rabbit-hole into Wonderland:

> "Down, Down, Down. Would the fall never come to an end? "I wonder how many miles I've fallen by this time?" she said aloud. "I must be getting somewhere near the center of the earth. Let me see: that would be four thousand miles down, I think—" (for, you see, Alice had learned several things of this sort in her lessons in the schoolroom, and though this was not a very good opportunity for showing off her knowledge, as there was no one to listen to her, still it was good practice to say it over) "—yes, that's about the right distance—but then I wonder what Latitude or Longitude I've got to?" (Alice had not the slightest idea what Latitude was, or Longitude either, but she thought they were nice grand words to say.)"[1]

1. Lewis Carroll, "Alice in Wonderland," Mount Vernon: Peter Pauper Press, 1954, p. 12.

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Upper Respiratory Infections. William E. Ayling, M.D., Director of the School Health Service of Department of Education, Syracuse, New York, gives in his 1954-55 annual report an account of an interesting experiment. He states that out of a school population of 28,282 pupils in 1953-54, 105,612 days were lost due to upper respiratory infections. Last year they decided to try to do something about the problem.

Eight schools were selected as a study group, four for the experiment and four to be controls. In the four schools selected for the experiment a concentrated effort was made to educate parents and pupils regarding the prevention of colds and measures to avoid exposure to others. It was decided to exclude any child showing signs of acute infection for a period of at least two days. Accurate records of the number of pupils having upper respiratory infections and the number of days lost were kept.

At the end of the school year the figures showed that there were more pupils having colds in the four experimental schools than in the controls. However, the total number of days lost was over 500 less in the first group.

The principals reported that this activity impressed the parents so that children with colds were not sent to school thus they recovered more quickly and there was less absenteeism. However, Dr. Ayling states, the results were not outstanding.—*A. O. DeWeese.*

THE SCHOOL HEALTH PROGRAM—A SELF-STUDY

BERTA H. MOIR, R.N.

Public Health Coordinator, Capital University, Columbus, Ohio

The School Nurse Can Offer Leadership. Since the practice of medicine in public schools is contrary to our American tradition, the purpose of the program is to give guidance and advice rather than to offer a curative program. Although the nurse in the school system is not trained as an educator, she must prepare herself for this role. Dr. C. Morley Sellery, Director of Health Services in the Los Angeles City Schools, states that the most important function of the school nurse is health education, and he believes that she "has an unsurpassed opportunity to function as a health educator."[1]

There is still a need for the school nurse to interpret her functions in particular systems and situations. Studies need to be made in personality assessment and fitness of persons to do specific tasks in health education.

One method by which school nurses can expand their scope and test their fitness to do specific tasks in health education is by actually working within a school situation and evaluating the program.

Plans are Formulated. The growing need for a planned and well-integrated School Health Program in our city stimulated my desire to make a study of our program. I am the school nurse and the only health specialist employed for the ten public and parochial schools in the city. There were various reasons why I felt that such a study was indicated. We had no written health policies in the systems, and there were no policies defining the part the school should play in the control of communicable disease. Neither health personnel coming into the system nor the teachers had any guidance to help them take their places in a good health program. There was no effort at coordination, but problems were met as they appeared without a consistent pattern. It was my belief that we needed a well planned School Health Program in grades 1-12 in all the buildings. The question might well have been asked: "Are our health policies and aims stated, or do they simply emerge in a haphazard fashion?" How could we establish a program of health education which would carry over from health knowledge to health action?

1. C. Morley Sellery, "The Nurse in the School Health Program—The Administrator's Point of View." **The Journal of School Health**, 21:122, 123, April, 1951.

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1. C. Morley Sellery, "The Nurse in the School Health Program—The Administrator's Point of View." **The Journal of School Health**, 21:122, 123, April, 1951.

Such a study seemed also to have significance because it could serve as a base line for a later evaluation of program achievement. We needed to determine our point of departure as well as to define our basic needs.

Because I wanted this study to be of educational value to the teaching staff and the community, I asked teachers, parents and students to participate. First, I had to explain the philosophy of school health. The local concept of the school nurse was outmoded, and many believed that she should serve primarily as a band-aid dispenser.

One of four biggest problems was to create the demand for a better program. While on the one hand those who had lived in the community over a period of years were apathetic, on the other hand new families believed that the program was more comprehensive than it really was. How could we present a realistic picture of what actually existed and what should be done?

My first step was to secure the approval of the superintendent for such a study. Then I prepared a survey form which I distributed to teachers, since the classroom teacher can best observe habits and teach attitudes. In some cases, I met with all the teachers of a building as a group in order to discuss the concept of school health and to distribute the survey forms. At these meetings we considered the philosophy of school health. In the School Health Program we included all of the activities carried on in the school which were related to health. The emphasis was on the preventive and educational aspect. There is still the tendency on the part of many to conclude that health is merely the absence of disease. By asking the teachers to participate through group meetings and personal interviews, I hoped to obtain a cross-section of the problems in each grade throughout the system.

On the survey form the teachers were asked to indicate: (a) what basic needs we should meet; (b) what they believed the present program to be; and (c) what were some practical ways of achieving a better program. The five areas which I included on this survey were: (a) environment, (b) health guidance, (c) emergency care, (d) health instruction, and (e) modified program for those with special problems.

Environment. Under the heading of environment the teachers were asked to consider (a) teacher health, (b) communicable disease control, (c) safety education, (d) mental health, (e) sanitation. In the area of teacher health, health examinations, sick

leave, teaching load, and working conditions were emphasized. Since the school has no written policies for communicable disease control, teachers were asked for comments and observations on the conditions which are dangerous and which occur most frequently. These suggestions were solicited to help form workable policies. We need a definition of teacher responsibility and school responsibility in communicable disease control.

In the area of safety education we searched for the answer to the following questions: Have we a program of safety education? Is it adequate in each school? Who is responsible in each building when accidents occur? What safety measures do we take with the buildings and grounds? What hazards are connected with crossings?

As the town has a new health clinic, the teachers were encouraged to list ways to utilize this resource. The mental health of teachers and other personnel was considered.

Sanitation facsilities were also investigated. Teachers were asked to observe whether both humidity and temperature were indicated in each classroom of the building, and if hand washing facilities were available and used. They were asked whether the janitor realized that he was a member of the health team.

Health Guidance. C. L. Anderson has written that the absence of a school physician does not eliminate the possibility of an effective program of health guidance and supervision, but it makes that supervision more necessary.[2]

In our schol system, pre-school physical examinations are given by the family physician. This is on a voluntary basis, and no arrangements are at present available for those who are unable to afford this examination. All that I could do as a nurse was to inspect and weigh the children every year. Teachers were asked to consider whether they favored a periodic examination by a physician or were content with the nurse-teacher referral. They were asked to give suggestions as to how the health services could be made more of an educational experience.

Emergency Care. At the beginning of the study there were no written step-by-step standing orders for emergency care which had been signed by a physician. What were the more common accidents which occurred from day to day within a school? Are the problems the same in each of our seven elementary schools? To what extent do the physical characteristics of a particular

2. C. L. Anderson, "Secondary School Health Guidance and Supervision," **Journal of School Health.** Vol. 21: 227-232, September, 1951.

school, such as too small a play area, poor surface on the play ground, etc., create special problems? Do we have adequate first aid facilities in each building, and do the teachers know they are there? Do we have provisions for reporting accidents? What should we do in an emergency when the parents cannot be reached? Because of the variety of experiences which a teacher has, I felt that the sharing of these concerns would point up the need for clarifying policy. Every school has policies: these may be written or unwritten; they may be consistent or inconsistent. It is time for standard policies to be adopted.

Health Instruction. Teachers were requested to describe the content, the time allocation, and the method of health instruction: direct, indirect, or related, and the special projects or campaigns used. There has been no apparent effort to have a well-planned, coordinated health education program for grades one to twelve throughout the system. It was known at the beginning of the study that on the elementary level SOME teachers had an annual health unit, SOME teachers did enthusiastic health counseling, SOME schools used health texts, and SOME schools had formal health classes with a health teacher. Were the teachers satisfied with this? Was more being done than appeared, or were they frustrated because they wanted to do more? I hoped that the survey form would answer these questions.

Modified Program. The school has a responsibility to modify the program to fit those children with special problems. The teachers were questioned about our modified program: (1) identification of a problem, (2) its nature and extent, and (3) provisions for a modified program. Types of handicaps that they were asked to consider were vision, hearing, epilepsy, cardiac, orthopedic, mental retardation, dental caries, and others. What was being done about Rheumatic Fever? Did the teachers know its symptoms and its crippling effects? Did they know their part in combating it? They were asked how we could meet the problem of dental caries.

The next step was to collect the data and evaluate it. At the same time I talked with church groups, mothers' clubs, and the P.T.A. to obtain a sampling of opinion, discuss the problem, and create interest. The response to this survey form was in itself a revelation. The response was the greatest for the elementary schools, where the most health education, counseling and guidance, and services are offered. Those elementary schools responded best

which were smaller, where communication flourishes more easily, and where the nurse spent more time in the classrooms and knew the teachers and their approach more intimately.

The Teachers Desire Change. The teachers made many positive suggestions about environment. They felt that they should stay at home when ill as the children do. The teachers need to know how to treat their own colds in the early stages. For good mental health teachers need more time for planning and preparation. For better communicable disease control there should be a written policy from the Board of Health. Parent education was suggested to remind them of the need for boosters to maintain immunity. Many parents believe one "shot" lasts a life time. Teachers felt the need of a school psychologist, and since the study was begun, such a person has been added to the staff. Smaller classes would contribute toward good mental health because the teacher could work with the socially ill-adjusted child. Teachers believe that much parent education is needed to promote mental health, safety, and sanitation. They believe there is need for a cafeteria where teen-age students can get a nourishing meal instead of a sandwich and coke at the drug store.

The teachers also considered health guidance. In our system a pre-school physical examination by the family physician is *encouraged, but not mandatory.* There is no provision for giving physical examinations and immunizations to underprivileged children. Teachers suggested a pre-school clinic in the spring so that corrections could be made before fall. First-grade teachers were especially concerned about the demands made on childrens' eyes in the middle of the year and wanted eye tests at that time. Some felt that there should be more frequent examinations by physicians during the school child's career. Realizing the ever-present problem of dental caries, others wanted a dental hygiene progam. Some wanted the nurse to schedule definite periods for classroom visits so that there would be more personal contact with the children.

The teachers commented on emergency care. They suggested that there should be more than one first aid area in each building, preferably one for each floor. There is a need for in-service instruction in first aid for teachers and students. Teacher training in first aid should be given with emphasis on actual experiences and there should be someone responsible for emergencies in each building.

The teachers examined health instruction. Because the chief problem here is lack of integration, a planned health education program is needed. Teachers do not have time to gather materials, but would use them if some one else assembled them. A health course should be set up for each grade in booklet form with materials available to teach the course; otherwise it is too haphazard. More definite areas of instruction should be designed for each grade. Real health teaching involves more than telling and presenting facts alone. We must help children to see that what they are learning meets their own needs and interests. Perhaps a program could be outlined so that the school nurse would have periods in which to discuss problems of rest, food, dental health, etc. It would be helpful to have her visit the room during "sharing time" to answer questions. Other health specialists could also be used in the class room. Health books are not always available and more supplementary material is needed. A planned program in health is needed just as we have it for art education and music education. At Junior High, where there are no formal health classes, teachers believed that a course in health with health teacher follow-up would be valuable. A health campaign is needed there. Girls should have a health counselor for both mental and physical advice. On the senior high level there is no planned health class. Teachers believed that a formal health class is needed. The students need help with boy-girl relationships and guidance in manners. They need suggestions for conduct on the street and in public places. Since most of them do not go on to college, they need instruction in preparation for marriage. There should be coordination between Junior High and Senior High on health courses.

Little or no comment was offered by the teachers on the modified program because they felt that "this was the nurse's job." It appears that in the past almost the entire emphasis in school health had been placed here. A fine speech and hearing program was in operation with a well-qualified therapist in charge. Did she have all the facilities she needed for such a program? Much attention was given to the crippled and handicapped child. Considerable understanding was shown the child with epilepsy. An epileptic clinic had been established largely through the efforts of a school teacher. The nurse gave vision tests to all of the children annually using the Snellen chart. In all cases of unsatisfactory performance, the nurse did follow-up with notes to parents, phone calls, home visits, and financial aid if indicated.

In general, then, the need seemed to be one of coordination and planning. There was some indication of a need to interpret

the function of the school nurse to the teachers. An in-service training program in the school was a "felt need."

The Pre-Test. In our Junior and Senior High Schools there are physical education classes, nutrition and science classes, but there is no provision for a health class in the curriculum. Essentially, health services are limited to the nurse's visit to the buildings once every two weeks and the annual testing of eyes with follow-up. In addition to using the teacher survey, I distributed a health check list among the girls in the physical education classes of grades 7-8-9-10. They were asked to check those subjects about which they would like to have additional information and those about which they would like to have class discussion. If we are to improve the health teaching of our teen-agers, we need to know what their health interests are and what they believe their health needs to be.

While this type of health planning was a new experience to the students, their response was serious and thoughtful. Out of seventy health items on the list, over one-half the students checked: dating problems, career and marriage, poor complexion, ability to converse, choice of appropriate clothing, money management, and how to get along with others. Over one-third checked: lack of attractiveness, poor posture, how to care for children, how to care for a sick person, nervousness, need for good study habits, too short or too tall, choosing shoes, no place for entertaining friends, being overweight. Less than 5% checked: conflicting ideas concerning alcoholic beverages and frequent use of drugs (2%). This check list gave me additional data for selling the need for health instruction to the principals.

Community Survey. The Community Council made a study the previous year on the health problems of children in the county. This was primarily of a socio-economic nature. It considered evidences of pathology rather than the health of the child in the school environment. I believed that our study was in no way a duplication.

Expert Guidance. At the beginning of the study a health educator from the state university was invited to meet with the superintendent and me to discuss the survey. After the teacher and student forms were evaluated, my next step was to invite health educators from the State Department of Health and the State University to meet with a small group of educators, medical leaders, and civic leaders. Community leaders interested in making major policy changes in health practices should not isolate

themselves from expert guidance from beyond the boundaries of the community.[3] This meeting was especially helpful because we learned of similar studies which were being made in other areas within the state. There was a discussion of the integration of health services and health instruction into the same program. We considered some positive results which might develop out of our study. The consultants answered questions on various aspects of the ideal school health program.

After we had studied the problem *writ large,* the school superintendent suggested that our next step should focus attention on one building with the idea of developing a good School Health Program there as a demonstration. Then the following year it could be extended to a second school, etc. Since the success of this program would depend on the classroom teachers, I wanted to work very closely with them in the planning stage. The superintendent and I decided on one particular school because it was small, because the teachers worked together well as a committee, and because much good work was already being done there. By asking the teachers there to describe their health program in greater detail for the benefit of other buildings, we hoped to stimulate their interest in health areas needing further attention. First, I had a meeting with the principal who was pleased that her school was chosen for the demonstration. Then I met with the teachers to consider plans for the future.

I want to work closely with each teacher in this building. They will record all that is being done in each of the areas related to health, eliminating what is not successful and incorporating new methods, techniques, and tools where they are indicated. On the elementary level health teaching is done in the classroom primarily by the classroom teacher with the nurse as a consultant and resource person on the planning level. By the end of the next year we hope to have presented a demonstration of a good school health program. We also hope to produce our own syllabus by that time.

Conclusion. This Self-Study was an attempt to measure our own School Health Program against the "ideal." I wanted to determine the extent of present activities and define our base line for later evaluation. I used the study primarily as an educational device which would ultimately effect change — a change to a dynamic program.

3. S. T. Kimball, "Citizen Participation, Social Scientists, and the Community Self-Survey. **The American Journal of Public Health,** 45: 274-276, March, 1955.

Knutson and Shimberg have provided us with two purposes in evaluation: program achievement and program progress.[4] In our own case it would have been next to impossible to measure program achievement because there have been no recognized goals, and standards are minimal. However, program analysis will be possible in the future, after our first operation is completed. We are aware that this program achievement must be based on our point of departure, and not on resulting reforms.

These authors state that program progress "is directed toward providing guidance for program activity." This is, of course, what our study attempted to do. A nurse with an appreciation of educational goals and techniques can offer this kind of leadership. This study made by the institutions involved focused attention on the present program, the need for planning a well-rounded program, the resources available, and the need for more personnel.

Our emphasis in the future will not be on *health education, per se,* but on health education *as a part of the School Health Program.*

4. Andie L. Knutson, Benjamin Shimberg, "Evaluation of a Health Education Program." **The American Journal of Public Health,** 45: 21-27, January, 1955.

* * * * *

DIET FOR WEIGHT CONTROL

Numerous food combinations and restrictions with respect to foods have been recommended in weight reduction and control programs sponsored across the country. So long as such diets provide fewer calories each day than an individual needs, and water is not retained, weight will be lost in proportion to the calorie deficit achieved[1]. However, lack of success with many of these diets makes it obvious that level of calorie intake is only one measure of a satisfactory diet. To be effective on a long-term basis, weight control diets should: 1) permit loss of stored fat, where loss is desirable, without damage to body structures; 2) permit maintenance of desired body weight after loss by simple additions to the reduction diet; 3) serve as a basic pattern of eating which might be followed the rest of an individual's life; 4) be planned to preserve and train the appetite; 5) provide foods acceptable to the individual and with "staying" qualities to prevent hunger; 6) be varied, interesting and not monotonous; 7) permit eating with others as an inoffensive member of the group; and 8) allow pursuit of normal activities with undue fatigue or hunger.

1. "Weight Contral Programs"—The National Dairy Council. Digest Number Two—November, 1955. The Digests are issued six times yearly in alternate months. Data upon which each report is based are on file in the office of the National Dairy Council, 111 N. Canal St., Chicago 6, Illinois, and further information is available on request.

HEARING CONSERVATION PROGRAMS: THEIR ACCOMPLISHMENTS AND DEFICIENCIES

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ACCOMPLISHMENTS AND DEFICIENCIES OF A HEARING CONSERVATION PROGRAM

The purpose of a hearing conservation program is discovery, diagnosis and appropriate referral for a child discovered to have a hearing defect. Since 1949, 166,114 children have been tested in the Chicago Public Schools Program, and 185,880 in the Chicago Parochial Schools. Of the total number, 8% were discovered to have a hearing loss sufficient to be referred to an otologic clinic. Almost 10,000 children were discovered to have a hearing defect which might moderately or profoundly hamper their school progress.

Hearing conservation is a public health program usually best carried out as part of a well-rounded school health program to find children with hearing loss, evaluate their total problem and arrange for a proper remedial plan. Special emphasis should be directed toward the preventive aspects of this program since many of the children will have early and mild losses, and effective follow-up care will obviate the many psychological and educational sequelae of prolonged breakdowns in the ability to communicate with others.

In developing a program, recognition should be given to the varying resources (medical, public health, and educational), population differences and other characteristics of the area. Because hearing conservation is a community responsibility, it is essential that support be sought from all agencies which could possibly have any relation to the program. The specific agencies to be consulted would vary somewhat according to the various resources in the different communities. Any overall plan for a hearing conservation program should contain the basic elements as set forth

Presented by Francis L. Lederer, M.D., at the Speech and Hearing Conference, University of Kansas Medical Center in Kansas City, Kansas, Fbruary 25, 1955.

in this discussion but should be sufficiently flexible to be adapted to the local community situation.

In organizing a hearing conservation program, it is strongly urged that budget appropriations be made for school otologic clinics. It is realized that initial expenses are high, however, the savings effected by both the parents, the school, and the medical groups, not to mention the salvage of the child, are considerable.

By having clinic facilities available in the school, several things are accomplished:

1. The facilities are readily available since the parents do not have to travel great distances in order to avail themselves of the services.
2. By having the informed type of otologist staffing these clinics, much educational work can be carried on in making the parent aware of the nature of the hearing loss and the difficulties confronting the child if this defect is not corrected.
3. By having a representative of the school present at such a clinic, an awareness of a child's problems can be brought directly to the attention of those in school who will be working closely and more understandingly with the child.
4. These clinics reduce over-referrals to a minimum by eliminating those children with a hearing loss which is directly attributed to a cold at the time of testing, or whose hearing defect would not be remedied by a medical referral.
5. The clinics give greater validity to referrals that are made, thereby reducing to a minimum the feeling that the taxpayers' money is being wasted by people doing hearing tests who do not understand procedures.
6. Finally, such clinics save the valuable examining time of the family physician through elimination of unnecessary referrals.

CRITERIA FOR EVALUATION OF A PROGRAM

The value of a well designed and well administered hearing conservation program to the child, the private physician, and to the community health and educational agencies, is recognized by all. In order to better understand that value, the following criteria are suggested:

1. Is there a comprehensive plan for case finding?
2. To what degree have the appropriate community resources (medical, health and education) been integrated?
3. What kind of education program for the public has been worked out, with special attention to the parent and the physician?
4. Are all of the services open to all children? Public and private schools at varying income levels?
5. Is there a definite program of follow-up, with adequate facilities?
6. Does the hearing conservation program bear its appropriate place in the general education and public health programs?
7. Is there an organized system of record-keeping, with provision for cross-checking and analysis at frequent intervals, and for gathering significant statistical data?

The following criteria are of special interest to the medical profession:

1. Is there an adequate staff?
   a) Otologists, pediatricians and/or general practitioners in the community, of whom at least the heads are licentiates of their special boards.
   b) Well-trained technicians and nurses.
   c) Informmed and reliable volunteers to supplement the professional staff.
2. Does the system of record-keeping include an adequate medical and social history, physical findings, both otologic and systemic, remedial measures, and results?
3. Is there an open channel of communication with the outside medical agency (clinic or private physician) which allows for explaining to the private physician the purpose of the program, the use of the record and report forms, etc.; sending reports to the private physician at the level of his training; consulting with the private physician or resident clinic physician personally on all cases with individual problems which cannot be classified in the set-up of the program; referring cases for treatment only to the original medical advisor?
4. Have the local medical society and other local medical and special groups been included in the planning from its beginning, and recommendations sought from them for the medical personnel to be appointed?

With this kind of approach and interpretation, the program should be able to expect of the local physicians that they accept the purposes and methodology of the program; that they serve in its development and administration; and that the local medical or otolaryngological society give its support by encouraging its members to serve in the program, and by giving time in its meeting, and space in its publications for discussion of purpose and value of the program.

School personnel would have the following criteria in mind in their evaluation of the program:

1. Does the plan provide for maximum benefit from school years by early discovery of the hearing defect, with early application of medical or surgical corrective treatment?
2. Is there a definite plan of education for children with serious hearing losses?
3. Does the program help the teacher become more conscious of the importance of normal hearing and make classroom adjustments for those children as well as the hard of hearing?
4. Does the program promote better understanding and provide clear channels between the parent and teacher about the adjustments needed for the acoustically handicapped child?
5. Is there measurable change in school absenteeism attributable to hearing problems?

The following is a summary of the accomplishments and deficiencies that are an outgrowth of the hearing conservation programs as we know them in Chicago:

A. HEARING CONSERVATION PROGRAM IN ILLINOIS

ACCOMPLISHMENTS	DEFICIENCIES
1. Planning	
1. Established a State Advisory Committee on Hearing Conservation. a. Inaugurated a county "pilot" program in hearing conservation. b. Initiated a "workshop" for training public health nurses in hearing conservation. Sponsored by: Dept. of Public Health; Dept. of Public Welfare; U. of Ill., D.S.C.C. c. Assisted in developing city and county programs in state. d. Authored a manual on Hearing Conservation.	1. Disinterest of county Medical Society in developing Hearing Conservation is still apparent, possibly due to lack of appreciation of their value in respect to the total planning, social, emotional, educational, as well as medical. 2. Limited understanding of Hearing Conservation by Supervising nurse of Public Health Programs.
2. Case Finding	
1. Established consistent case finding procedures throughout state. (This was the result of 6 summer workshops for Public Health Nurses.) 2. Developed Hearing Conservation Program throughout most counties of Illinois. 3. Shares group testing equipment (principally earphones) among counties. This reduces cost and encourages additional programs. 4. Knowledge that *case finding* is a small part of program and *time* devoted for *follow-up* of evaluation of the total problem must be carefully planned.	1. Inability of physicians in general to detect and/or appreciate slight or moderate hearing losses. 2. Limited funds discourage group screening and individual screening in time consuming and expensive procedures.
3. Evaluation of Total Problem Medical, Social, Emotional, Educational	
1. Improved multidiscipline approach in evaluating the *total* problem.	1. Greater cooperation or "teamwork" needed on part of the physician. When evaluating total problem, they fail to take time to confer with other members of team.
4. Arranged for a proper remedial plan. Medical	
1. Established criteria for otological referral made by Conservation, Physical Medicine and Rehabilitation of the A.M.A. 2. Developed otological screening clinics as an integral part of hearing conservation programs in larger cities.	1. Failure of general physicians to refer patients to an ear specialist when unable to provide adequate treatment. 2. Failure of physician to return otological diagnosis, etc., to referring agency. This makes follow-up difficult if not impossible.

3. Shared otological screening findings with the otologist who does additional diagnosis and possibly treatment.
4. Established Speech & Hearing Centers for diagnosis H.A.E. and H.A.S.

5. Social and Emotional

1. Improved social and emotional adjustment of child due to greater appreciation of problems by social workers and psychologists.

Failure of the physician to recognize the educator as the member on the team who makes the educational recommendations.

Educational

1. Earlier use of wearable hearing aids.
2. De-emphasis on segregation of hard of hearing children from deaf.
3. Integration of hard of hearing in regular classes.
4. Increased facilities for providing hearing therapy for hard of hearing (speech reading and training, speech correction and the use of an aid).

B. HEARING CONSERVATION PROGRAM CHICAGO BOARD OF EDUCATION

ACCOMPLISHMENTS	DEFICIENCIES
1. Planning	
1. Established a joint Advisory Committee on Hearing Conservation which included representatives from educational groups, medical societies, social agencies and parent groups.	1. Need for planning a strong educational program in Hearing Conservation which could be carried out throughout the year among educators, doctors and parent groups.
2. Provided for both in-service training and formal study by teacher-technicians of the Hearing Conservation Program.	2. Need for taking into greater consideration the problems of the classroom teacher, and having representatives of the classroom aid in planning a Conservation Program.
3. Worked out referral procedures with social agencies.	3. Disinterest by general practitioners and ear specialists in the goals and values of a Hearing Conservation Program.
4. Through participation with the Joint Committee for School Health Planning, the necessity for increased facilities to care for children with hearing problems was emphasized.	4. Limited understanding of the purposes and values of a Hearing Conservation Program by local school administrators resulting in an uncooperative attitude by classroom teachers.
5. Worked out an integrated program of referral and care with existing departents of Special Education.	
6. Compiled a manual on Hearing Conservation which would be useful in setting up a Hearing Conservation Program in any large city.	

7. Provided for School Otologic Clinics to be staffed by otologists from Illinois Eye and Ear Infirmary and paid by the Chicago Board of Education.
8. The good relations between the Board of Education and parents of the children it services was increased by this demonstration of the care given "all the children of all the people" without added expense to the parents.

2. *Case Finding*

1. Established consistent case finding procedures for referrals to school clinics.
2. Established standardized examination and referral procedures in school otologic clinics.
   a. Easily available clinic facilities encourage parents to avail themselves of such services.
   b. By encouraging parents to talk about past medical history, much educational work can be accomplished by the school otologist. The parents can be made aware of the problem a hearing loss can be to their child's educational progress and a realistic prognosis can be made to the parent.
   c. By having a representative of the school present at this clinic, an awareness of the child's problem can be brought direct- to the attention of those in the school who will be working with the child.
   d. These clinics reduce referrals to a minimum through careful examination by a competent otologist.
   e. The school clinics give greater validity to the referrals which are made, to private practitioners, thereby reducing to a minimum any ill feeling the parents might have about needless expense and worry.

1. Because of the lack of a constant educational program carried out to acquaint local school administration and teachers of the problem of a child with a hearing loss, some members of these groups feel such a program is too expensive in time and money.
2. Because of the inability and/or unwillingness of the physician to make a complete examination or to refer to a specialist, children do not receive proper care.
3. Many physicians fail to complete needed information concerning examination and treatment of the child with a hearing loss thereby depriving the school of information regarding proper school placement and/or special facilities, ie., lip-reading, proper classroom seating, speech therapy.
4. Need for more intensive follow-up program of testing and referral of those cases which were found to have a moderate or severe hearing loss or were borderline hearing problems.
5. More intensive "teamwork" approach needed by all departments of special education so that all information about a child is available to all interested parties.

3. *Evaluation of Total Problem*

1. Educated lay and professional groups to the problems of a child in a regular classroom with a hearing loss.
2. Focused attention on the need for care for such children.
3. Improved the learning and social situation of the child by providing

information which will enable educational, medical and lay groups to deal with such problems realistically.
4. Educate the child to his own problem so that he can make any necessary adjustments.
5. By having accurate and scientific tests available, we are in a position to suggest needed medical and otologic care and to arrange for the child's proper school placement.
6. We have discovered through the testing program that children who have to repeat grades, or who are in ungraded rooms have a high incidence of hearing loss. By providing for care, the taxpayer is spared both money and teaching time which might be put to better use.
7. Compiled a body of statistics which is available to educational and medical groups for research projects.
8. Has given impetus to a general health program.

The type of programs carried on by the Chicago Board of Education and the Catholic School System may not serve the best interest of a small rural community or a tightly knit city of 10,000, but the general advantages or disadvantages are applicable to any hearing conservation program.

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